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SCIENCE IN THE AGRICULTURIST, 1840-1845

James X. Corgan
Austin Peay State University
Clarksville, Tennessee 37040

Abstract

Over 50 scientific contributions appeared in *The Agriculturist*, a Tennessee journal of the early 1840's. These early articles merit the consideration of modern scientists whose work requires an understanding of 19th Century ideas and techniques. An annotated bibliography is provided.

Introduction

While the *Journal of the Tennessee Academy of Science* is a product of the 20th Century, the move toward a regionally oriented scientific and technical literature has deep roots in Tennessee history. This paper briefly examines the scientific content of one 19th Century Tennessee journal, *The Agriculturist*. Published in Nashville from January 1840 through December 1845, *The Agriculturist* presaged the more sophisticated regional scientific publications of the present century. It had a renowned scientific editor, Dr. Gerard Troost, and it had the sponsorship of the Tennessee Agricultural Society. This organization was, in essence, a learned society. Caruthers (1840) and Gordon (1840a; 1840b) discuss the journal and the society that sponsored it.

Today, *The Agriculturist* and its scientific content are forgotten. In indices of Tennessee history the name "Agriculturist" never appears and the content of the journal is not included in standard scientific bibliographies. The omission seems undesirable.

Like many journals of the era, *The Agriculturist* reprinted excerpts from textbooks, from other journals, and from the popular press. Aside from these, its scientific content falls into three broad categories:

1. Original adaptations, or synopses, of rare Tennessee government documents written by Troost, the scientific editor of *The Agriculturist*.
2. Original articles and notes.
3. Responses to inquiries.

The original scientific content is here summarized in an annotated bibliography.

Bibliography

Since all items appeared in the same journal, citations omit the journal name. Untitled letters are given a descriptive title in parentheses. Extracts from the published works of Troost are identified by number (e.g.: Adapted from the Fifth Geological Report). Wilson (1953) provides a complete list of these titles, obviating the need for detailed citations.

Anonymous. 1840a. Tennessee marble quarries. 1:121.
The J. W. Clay and the A. Demoss quarries, both in the Nashville area, yield good decorative stone.

———. 1840b. Restoration of bogs; draining, etc. 1:269.
Reviews causes of bogs, including creation of impervious conditions by poor agricultural practices. Recommends a topographic survey prior to designing drains.

———. 1841a. Rules for gauging. 2:13.
Converting casks to gallons, estimating cordage of wood, etc. (See Troost 1840f).

———. 1841b. The science of chemistry. 2:14-15.
Defines scope. Subsections are termed "Soap making", "Geological chemistry", etc.

———. 1842. Plaster of Paris. 3:238.
Use of gypsum as a fertilizer.

———. 1845a. Chemistry. 6:42-43
Introduction to a proposed series of articles on the chemical bases for plant growth and for physical phenomena.

———. 1845b. Chemical Science. 6:90-91
Philosophical statement, probably by the Rev. T. Fanning. Stresses the need to evaluate the real accomplishments of chemistry and the need to place science in a cultural prospective where it is not the dominant intellectual discipline.

———. 1845c. Natural Science. 6:91
A companion to the above, depricating book learning.

Buchanan, A. H., R. Martin, and J. W. Stout. 1843. To the physicians and students of medicine in Tennessee. 4:95.
A proposal to establish a State Medical Association museum in Nashville.

Buckley, S. B. 1845. Notes on a botanical tour—No. 2. 6:116.
Reports genera and species col-

lected at specific localities in Tennessee. Comments on earlier field work in Tennessee apparently by the English botanist Lyon. Describes working with a German botanist, Dr. Rugel, who was collecting near Dandridge.
Buckley was a New Yorker and this article was reproduced from *Cultivator*.

Cockrill, M. A. 1844. A plan to drain the Lower Mississippi Valley. 5:132-133.
To prevent flooding, overflow facilities are needed. Discusses modification of existing rivers and construction of canals.

Fanning, T. 1841a. Thermometrical. 2:71, 118, 167, 239.
Except for the first item, which only treats February, each entry has a weather summary for two months. Data provided are total rainfall and three daily temperatures: sunrise, noon, and sunset. Observations were made five miles east of Nashville.

———. 1841b. Agricultural excursions. 2:146-148.
Agricultural geography in Williamson and Maury Counties. Stock bred, crops raised, etc.

———. 1841c. Agricultural excursion, No. 2. 2:225-227.
As above. Deals with Davidson and Sumner Counties.

———. 1842a. Thermometrical 3:21, 22
As above. October and November 1841.

———. 1842b. Meteorological observations . . . 3: 46, 70, 94, 118, 142, 167, 191, 215, 264, 288.
As above but added barometer readings, wind direction, and remarks.

———. 1842c. Agricultural excursion, No. 3. 3:49-50.
Mostly Lauderdale Co., Alabama.

———. 1842d. Agricultural excursion, No. 4. 3:97-98.
Mostly Franklin Co., Alabama.

———. 1843a. Geological museum. 4:2.
Request for donation of specimens. The museum was in instructional facility at Fanning's Elm Crag Agricultural School.

———. 1843b. Agricultural and horticultural museum. 4:2.
As above.

———. 1843c. Meteorological observations . . . 4: 15, 16.
November and December 1842.

———. 1843d. Geology. 4:19-21, 34-36.
Scholarly summary. Concludes that when geologic chronology appears to conflict with the Bible, the Bible is right.

———. 1843e. Acknowledgements. 4:127, 139, 180.
In response to appeals by Fanning (1843a, 1843b) many donations were received including two lots of vertebrate fossils. William Butler, of Tuscumbia, Alabama, donated mastodon bones from the mountains of Alabama and S. Jamison, of Bedford County, Tennessee, donated various specimens of mastodon and hyaena.

———. 1845. Donations to Franklin College. 6:171, 187.
David Dale Owen, of New Harmony, Indiana, donated a box of minerals. Most were specimens from the Maclure Collection.

Gordon, Francis H. 1840. (On the evanescent properties of the grains and grasses). 1:246-249.
Experimental studies were planned on wheat, oats, rye, and corn but were not conducted. Speculations on germination, spoilage, etc.

W.B.H. 1842. Ditching. 3:36-39.
An extended commentary of techniques used in draining marshes. Recognizes five types of bogs.

Litton, A. 1844. Chemistry. 5:33-35, 49-50, 65-67.
Summary of knowledge. General utility of studying chemistry.

Martin, Samuel D. 1845. Analysis of Kentucky soil. 6:107-108.
Chemical analysis of three soil samples from Clarke County, Kentucky. Republished from the *Albany Cultivator*.

Shelby, John. 1844. The philosophy of finding water by means of a rod. 5:6.
Attempts to explain "water witching" in terms of animal magnetism, electricity, etc.

Troost, G. 1840a. On marl, and its application and effect upon the soil. 1:6-11.
Adapted from the Third Geological Report.

———. 1840b. Cocke County. 1:31-33.
Adapted from The Sixth Geological Report.

———. 1840c. (On curing bacon). 1:43.
Chemistry of curing bacon with saltpeter.

———. 1840d. Geological description of the State of Tennessee. 1:77-79; 102-103.
Adapted from The Fifth Geological Report.

———. 1840e. (On the nature of glades). 1: 97-98.
Repeats stance of his Third Geological Report.

———. 1840f. Weights and measures. 1:226-230.
Summary of weight and measure systems currently used in The United States and Western Europe. Conversion tables.

———. 1842. Sevier County. 3:6-8, 29-31.
Adapted from The Sixth Geological Report.

———. 1843. [Mineral spring]. 4:128.
Analysis of water from a spring near the Nolensville Turnpike, some five miles from Nashville.

———. 1844a. Greensand. 5:4-5.
Original chemical analysis of a McNairy County sample and a long extract from the literature.

———. 1844b. Natural history of the elephant. 5:57-58.
Summary of knowledge.

———. 1844c. Natural history of the rhinoceros. 5:71-72.
As above.

———. 1844d. Natural history of monkies. 5: 83-85.
As above.

———. 1844e. Natural history of animals continued: the horse. 5: 106-107.
As above.

———. 1844f. A picture of nature. 5:145-148.
Comments on the distribution of organisms.

CONCLUSIONS

Scientific articles in *The Agriculturist* vary in scope, in subject matter, in quality, and in present day worth. For those who forecast floods, climatological data for the 1840's may be invaluable. Statistics stand the tests of time and so do specimens. Perhaps it may still be possible to locate the mastodons and mineral specimens that were donated to Fanning's educational institutions. Items from the Maclure collection seem especially important (Fanning, 1845, above).

William Maclure (1763-1840), an epic figure in the history of science, was the first American to publish a geological map of North America. His scholarly contributions were, in part, documented by specimens in his collection. When Maclure died, David Dale Owen, a former apprentice of Gerard Troost, became scientific executor of Maclures' estate (Hendrickson, 1943). What did David Dale Owen send to Tennessee? The donation was never described in detail but they were minerals and many were foreign. Beautiful crystals and specimens from exotic places are rarely destroyed. High intrinsic value items from the Maclure collection may still exist in institutional, or private, collections of Tennessee.

Beyond specimens and statistics, many articles look "practical". Troost's conversion tables (Troost, 1840f, above), Martin's soil analyses (Martin, 1845, above), and Litton's chemistry (Litton, 1844, above) tell exactly what was done in the laboratory of the 1840's. To appreciate data from the era, one should know how the data were derived. *The Agriculturist and Journal of the State and County Societies*, to give the full name of the journal, was not designed as a specialized scientific periodical. Still, it had an impressive scientific content that may interest the practicing scientists of modern Tennessee.

ACKNOWLEDGEMENTS

Mrs. Lida Allen of the National Agricultural Library, Washington, D.C., kindly granted access to the only complete set of volumes 1 through 5 of *The Agriculturist*. No known library has a complete set of volume 6, but the John Crerar Library in Chicago has a copy that is missing only number 4. At present, volume 6, number 4, cannot be located in any library.

LITERATURE CITED

Caruthers, A. 1840. Defects and remedies in the agriculture of Tennessee. Agricultrist 1: 279-281.
Gordon, F. H. 1840a. The society and its organ. Agriculturist 1: 15, 89-91.
Gordon, F. H. 1840b. Report of the corresponding secretary. Agriculturist 1: 249.
Hendrickson, W. B. 1943. David Dale Owen: Pioneer geologist of The Middle West. Indiana Historical Bureau. 180 pp.
Wilson, C. W., Jr. 1953. Annotated bibliography of the Geology of Tennessee through December 1950. Tennessee Div. Geol. Bull. 59. 308 pp.